

Foale extends U.S. presence on Mir station

By Kyle Herring

When Mike Foale crossed the Atlantic Ocean more than 15 years ago from England, he brought with him a doctorate in astrophysics and a desire to work in the American space program. That desire led to three flights on the space shuttle, most recently flying within 40 feet of the Russian Mir Space Station.

Having whetted his appetite with the STS-63 mission, Foale now prepares for a fourth space flight to finally close that distance, dock with the station and board Mir. For the last year and a half, he has lived, worked and prepared for this four month mission at the Gagarin Cosmonaut Training Center in Star City, Russia, outside Moscow. His stay aboard Mir will extend the continuous U.S. presence in space that began in March 1996 with Shannon Lucid on the STS-76 mission.

Reflecting on the first shuttle rendezvous with Mir that laid the groundwork for the docking missions two years ago, Foale says that even then he saw it as something special.

"It was a very touching and emotional moment for me," he says. "I thought I was part of a very big venture—a kind of worldwide venture joining two countries together."

STS-63 was the first time the shuttle approached Mir and presented unforgettable views that Foale says he's looking forward to seeing again.

"Certainly I remember that view really clearly from when we approached the Mir and sunlight glinting off the solar arrays," he says.

Living in space for long periods means having a different outlook on what lies ahead, Foale says, because the space shuttle missions are of finite lengths. He jokingly views his trip to Mir as a "bit like a marriage."

"The wedding is exciting, but you really have to think about what is going to happen beyond that as you work through the whole mission," Foale says. "So I'm being much more calm in my attitude to what is going to happen after the hatch closes and the shuttle leaves. That's where I just learn to live, get on with my crew mates and do my duty."

As has been the case on the previous crew exchange flights with Lucid, John Blaha and Jerry Linenger, Foale expects the reunion to be an emotional one. "I'm interested to see exactly what his (Linenger's) expression will be."

Having moved several times in the last year and a half as part of his training regimen, Foale is treating this trip as just another move. "You get used to your new house and new surroundings and new people. You adapt to it," he says.

Linenger prepared for his flight to Mir by cross-country skiing at night in Star City. Foale, too, tried cross-country skiing while in Russia, "but not at night," he jokes. He did it as a general conditioning tool rather than as preparation for the Mir trip.

Coincidentally, boarding school back home in Britain helped him to deal with being away from family. "I'm used to seeing loved ones depart and being in a place that was initially feeling rather strange



JSC Photo S96-17465

Astronaut Mike Foale suits up in his Soyuz spacecraft simulator during a training session at the Gagarin Cosmonaut Training Center in Star City, Russia, outside Moscow. Foale is expected to replace Jerry Linenger for a four-month stay on the Russian space station continuing America's presence in space.

and foreign to me," he says.

Foale says he's not worried about systems problems experienced on the Mir during Linenger's tour.

"I think living on the Mir is certainly no worse, probably a lot less dangerous than any shuttle or Soyuz launch. By far the riskiest thing I'm doing is going out to the launch pad with my fellow crewmates on STS-84," he says. "Once you're in space, the environment is less severe in a time-critical way and I think that once you've got past the hurdle of the launch, everything else is easier, and going across to the Mir is no big transition in risk."

"One thing, I should say, that has never ceased to amaze me is every time we think something has really gone wrong in the Russian program—it's really bad—it hasn't, and we've had many, many false alarms, many scares about things being 'the end' on board the Mir. Indeed the Mir is an extraordinary spacecraft because it's lived long beyond its design lifetime, but the

Russians have incredible ingenuity and resilience in maintaining that space station in a working order."

As Foale and his crew mates wrap-up training for their mission, a late addition to their logistics payload—a new Elektron unit, the oxygen generating system for the space station—has been installed in *Atlantis*' Spacehab. The four-foot-long, 300-pound unit will be the first item transferred from the shuttle to Mir and installed in the Kvant-2 module following undocking. Current plans call for the operating Elektron system now in Kvant-2 to be moved to the Kvant-1 module to be used as a back-up.

Though a space walk is not planned during his stay on Mir, Foale did conduct an extravehicular activity on STS-63 with former Astronaut Bernard Harris. As Linenger's backup, the two trained side-by-side in Star City for stays on the space station. Foale has prepared for any contingency space walk by wind surfing—a favorite hobby that he feels is good training.

"I've always thought that the wind surfing that I do is really applicable," Foale says.

In June 1983, Foale came to JSC in payload operations as the space shuttle was about to fly its seventh mission.

It was during this time that he met and eventually married the former Rhonda Butler. He worked as a payloads officer in Mission Control for several shuttle missions prior to joining the Astronaut Corps in 1987.

Foale has thought quite a bit about the future after his return from Mir. "Rhonda and I are great planners for anything," he says. "We've already been thinking what my attitude will be and what kind of vacation we're going to take after the flight. Will I be dying to be on a beach and have wind in my face? Probably," Foale says.

Beyond that, he says he would like to lend his language skills and knowledge of life on a station to the building of the new International Space Station scheduled to start its assembly in space next year.



JSC Photo S96-17464

Foale gets a fit check in the Soyuz capsule during training in Star City. In case of an emergency, Foale and his Russian crewmates, Mir 23 Commander Vasily Tsibliev and Flight Engineer Alexander Lazutkin, would evacuate the Mir space station in the Soyuz.



JSC Photo S96-17416

Foale exercises in the Star City gym. Workouts and cross-country skiing are conditioning tools in preparation for the Mir trip.



JSC Photo S96-17453

Foale receives a fit check of his Soyuz suit, which will be delivered to the Mir for his fourth-month stay on the Russian outpost. Foale has spent the last year and a half living and working in Star City in preparation for the STS-84 mission, scheduled to launch Thursday, May 15.

Atlantis to launch Thursday on crew exchange mission

By Kyle Herring

Atlantis is set to launch at 3:08 a.m. Houston time Thursday, May 15, to begin the sixth space shuttle mission to dock with the Russian Mir Space Station. The countdown begins Monday.

Highlighting the flight will be the swap of Astronaut Mike Foale with Jerry Linenger who has been on Mir since *Atlantis*' last visit in January. As has been the case in the previous docking missions, some 7,000 pounds of supplies will be transferred between the two spacecraft during the five days of joint operations. Foale will return home on *Atlantis*' next visit in September after swapping places with Wendy Lawrence, who is in her final months of training in Star City, Russia, in the suburbs of Moscow.

Though delayed by a couple of weeks

from reaching the launch pad, *Atlantis*' processing has been smooth enough to maintain the originally planned launch date, which is precisely targeted to allow *Atlantis* to rendezvous and dock with the Mir just after 9:30 p.m. CDT May 16. With an on-time launch and docking, the five days of joint operations is scheduled to conclude with *Atlantis*' undocking from Mir about 8:45 p.m. CDT May 21.

If all stays on schedule, the STS-84 mission should conclude with a landing back at the Kennedy Space Center on Saturday morning, May 24.

Assisting with the transport of supplies and crew members will be Commander

Charlie Precourt, Pilot Eileen Collins and Mission Specialists Jean-François Clervoy, Elena Kondakova, Carlos Noriega and Ed Lu.

Noriega and Lu are flying for the first time on the shuttle. Both are members of the astronaut class of 1995. The rest of the crew has flown at least once previously. Foale is about to venture into space for the fourth time, Precourt for the third and Collins and Kondakova for the second. Kondakova has the longest time in space of the crew based on her flight as a cosmonaut crew member aboard Mir for six months.

Once docked, the hatches between *Atlantis* and Mir will be opened, the STS-84

crew will join Cosmonauts Vasily Tsibliev and Alexander Lazutkin and Linenger. The two cosmonauts launched to Mir on Feb. 10, docking two days later.

Precourt will be the first astronaut to return to Mir, having been the pilot on the first docking mission two years ago. He said opening the hatches will be "like an old homecoming for family that you haven't seen for a long time." Both crews trained together in Russia and here at JSC. They also have talked several times via ham radio.

Atlantis' mission will be the 19th for the orbiter and the 84th in shuttle program history. After the flight, the vehicle will be processed for the next docking mission, STS-86, to bring Foale home and drop Wendy Lawrence off at Mir.

